

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 27 APR 2005

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To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/001552

International filing date (day/month/year)
27.01.2005

Priority date (day/month/year)
03.02.2004

International Patent Classification (IPC) or both national classification and IPC
C01B3/34, C10G9/20, C10J3/56

Applicant
EBARA CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1b/s(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Authorized Officer

Zuurdeeg, B

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/001552

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/001552

Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ not paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos.

Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, Inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	3-5,8-10,13-15,18-20
	No: Claims	1,2,6,7,11,12,16,17
Inventive step (IS)	Yes: Claims	
	No: Claims	1-20
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/001552

Box No. VII - Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item IV

Lack of unity of invention

This Authority considers that there are 2 inventions covered by the claims indicated as follows:

- I: Claims 1-5 and 11-15 directed to a system and process comprising a cracking furnace
- II: Claims 6-10 and 16-20 directed to a system and process comprising a reforming furnace

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The application contains the following independent claims:

- entity/system claims (independent claims 1 and 6)
- activity/process claims (independent claims 11 and 16)

Since the subject-matter of independent claims 1, 6, 11 and 16 is not new in view of D1 or GB-A-1 533 163 (see claims 1-14, figures 1-4), the two (groups of) inventions identified above are not so linked as to form a common general inventive concept.

A common problem, underlying these two (groups of) inventions, either is not present, is a common desire in the art or is already known from (and solved by) document D1. Therefore no common problem could be found which could serve as the general inventive concept required by Rule 13.1 PCT.

Hence, the application contains multiple (groups) of inventions, as identified above, which are not unitary in the meaning of Rule 13.1 PCT.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability;

citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: GB-A-1 533 163

D2: WO-A-02/051966

D3: EP-A-0 776 962

2. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of claims 1-20 either is not new in the sense of Article 33(2) PCT or does not involve an inventive step in the sense of Article 33(3) PCT in view of at least one of the documents D1 to D3.

- 2.1 Document D1 discloses a plant and process comprising a cracking or reforming furnace and an oil gasification unit for gasification of a heavy residual oil, the purified gas is passed to the fuel inlet of a burner of the cracking or reforming furnace (see claims 1-14, figures 1-4).

The subject-matter of independent claims 1, 6, 11 and 16 is therefore not new in view of D1 and it does not fulfill the requirements of Article 33(2) PCT.

- 2.2 Dependent claims 2-5, 7-10, 12-15 and 17-20 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, either are new or involve an inventive step with respect to the prior art named in the present proceedings.

The reasons therefore are that the additional features of claims 2, 7, 12 and 17 are directly known from document D1 (Article 33(2) PCT). The additional features of dependent claims 3-5, 8-10, 13-15 and 18-20 are either a combination of features obvious to the man skilled in the art in consideration of the disclosure of the prior art named in the present proceedings (D1-D3), or they concern only minor modifications which lie within the normal practice of the man skilled in the art (Article 33(3) PCT).

Re Item VII

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2005/001552

Certain defects in the International application

- 7.1 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D3 is not mentioned in the description, nor are these documents identified therein.

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Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

see separate sheet

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Re Item V

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- 2.1 Document D1 discloses a plant and process comprising a cracking or reforming furnace and an oil gasification unit for gasification of a heavy residual oil, the purified gas is passed to the fuel inlet of a burner of the cracking or reforming furnace (see claims 1-14, figures 1-4).

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Re Item VII

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